Chuck,

Winston has briefed me re: Province St. BOS and asked for my input.
I have reviewed the correspondence and site plans as well as in house records.
I have the following observations to offer.

1. Three Foot Discussion
Documentation submitted by third party attorney repeatedly references that they were told that excavations more than 3' from our main would not require CI main replacement. This is simply not true. Winston's letter clearly makes two points.
First, that anything within 3' of these CI mains does require CI replacement, (which is true.) Excavations beyond 3' were not discussed in this statement.
And secondly, that these particular mains also require replacement, (which is also true.)
If only the first statement were made, without the second, the argument could be made that they misunderstood the need for main replacement. However, it is not a credible argument that they read the first statement, misunderstood it, and did not read the second statement which clearly states the conclusion. Winston stated this conclusion rather than go through an explanation of the regulation. A sample explanation follows.

A careful reading of 220 CMR 113, as it applies to this situation, can be summarized with the following three statements.
1. Any excavation that places our pipe below the angle of influence, does not require pipe replacement.
2. Any excavation that places our pipe within 3' of it and is above the angle of influence, does require pipe to be replaced.
3. Any excavation that places our pipe within the angle of influence, but more than 3' from the excavation, requires engineering analysis. This analysis is to determine if the pipe will be subjected to more than the maximum allowed 500 microstrain.
It seems obvious that the third party has a copy of 220 CMR113, and has read it, so he must know this as well as we do!

2. Length of Required Replacement Discussion
The third party attorney mentions that only the part of the CI parallel to his client's excavation is necessary to be replaced. The 220CMR 113 states that additional piping must also be replaced that is considered to be a safe distance, KeySpan has opted to define this safe distance as the distance from the top of the gas main to the bottom of the contractor's trench. In this case the gas main has 3' of cover and the excavation is to be 68' down. This would require an additional 65' of 8" CI piping to be replaced on each side of the trench. That, of course means that 130' of CI to be replaced, in addition to the piping that is parallel to the excavation.
This formula was not arbitrarily designed by KeySpan. It is identical to the formula used in 220CMR113 in part, to calculate the required replacement footage for cross trench encroachments.

3. Poor Condition Discussion
Assertions are made that the 8" CI pipe is in poor condition, is old, and will soon need replacement.

"Poor" There is no documentation that a qualified person has determined that this pipe is in "poor" condition or what standard was used to determine this. Admittedly, all CI when it is exposed after being in the ground for many years *looks* terrible. However, usually, after the scale is removed, we find good, serviceable pipe. In fact, it is most interesting that the source of this statement is never given.
"Old" Yes, the pipe is as old as it is. However, to imply that this means that it is no longer serviceable would be incorrect. I have never seen any study which related the age of CI pipe with a need to replace it. The most usual reason to replace CI piping is because of third party construction which produces bending deformations along their lateral axes and ultimate pipe failure.
"Soon Need Replacement"- It is well established that eight inch pipe is superior in performance to 3", 4" and 6". I would not elect to replace it until all of the smaller sizes were replaced first. If that were the case, it would likely stay in the ground another 100 years or so, were it not for third party construction such as this.
"Depreciated Pipe"
Accounting Department practices are not part of an engineering analysis regarding the quality of pipe.

4. "Does the pipe need to be replaced" Discussion

There is no data available (regarding previous calculations) establishing how far from the trench the CI main must be before we exceed 500 microstrain at these depths. These calculations are exhaustive and expensive. However, we do not need to do the actual calculations to reach a conclusion. Major factors involved are pipe size, trench depth, and soil type. We do have these calculations for excavation depths up to 20'. Some of these results are as follows:
Assuming 8" CI pipe, properly installed timber shoring, ideal soil conditions (medium to dense sands and gravel or medium to stiff clay) and a depth not below the water table, the minimum allowable distances from the CI main to the trench cuts are the following.

For a 16' deep trench, the gas must be 5.0' away.
For a 17' deep trench, the gas must be 7.5' away.
For an 18' deep trench, the gas must be 8.0' away.
For a 19' deep trench, the gas must be 9.5' away.
For a 20' deep trench, the gas must be 11.0' away.

It seems obvious that the piping will experience 500 microstrain long before the depth approaches 68'

Please call me if you would like to discuss any of this further.
Next week I will be on vacation on Cape Cod, but my cellphone will be generally on and I will try to check email daily.
If available, I'm sure that Ernie Grasso can address these issues as well as I. However, it must be understood that I have not discussed this with Ernie at all.